Abstract:

Introduction: *Enterococcus faecalis* is the most common specie cultured from teeth with infection or failed root canal treatment. Chemo-mechanical preparation of root canal is not able to completely eliminate bacteria from root canal system. It is important to use endodontic sealers with antibacterial effect to remove remaining bacteria in root canal. The purpose of this study is to compare antibacterial effect of epoxy resin sealers with bioceramic sealers against *Enterococcus faecalis* at In-vitro conditions.

Method and material: Antimicrobial effect of two epoxy resin sealers - AH Plus and AD Seal,Meta - and two bioceramic sealers - MTA Fillapex,Angelus and Sure Seal Root – against *Enterococcus faecalis* (ATCC 29212) were assayed using both agar diffusion and direct contact tests. In agar diffusion teset, 0.5 McFarland suspension was added to plates containing TSB medium (Tryptic Soy Broth). Blank discs dipped in each sealer were placed on plates and incubated for 24 hours at $37^{\circ c}$.then inhibitory zones for each sealer were measured in millimeters. In direct contact test, microtubes containing same amounts of each sealer with TSB were incubated for 24 hours at $37^{\circ c}$. The cultures were diluted and the number of bacteria enumerated in CFU/ml. Data were statistically analyzed using ANOVA .

Results: In both tests, MTA Fillapex and AH Plus had significantly more antibacterial effect than Sure Seal and AD Seal, whereas the difference between MTA Fillapex and AH Plus and also between AD Seal and Sure Seal was not remarkable. In both tests MTA Fillapex had the most antibacterial activity. Sure Seal and AD Seal had no effect in agar diffusion test while in direct contact test they had very low effects.

Conclusion: MTA Fillapex and AH Plus have the most antibacterial activity (respectively) while Sure Seal and AD Seal have very low effects.

Key words: *Enterococcus faecalis*, endodontic sealer, antibacterial effect